Reviewer's report

Title: Psychometric properties of the Cardiac Depression Scale in patients with coronary heart disease

Version: 1 Date: 19 August 2012

Reviewer: Jess Fiedorowicz

Reviewer's report:

The authors, who are from a leading center for the study of depression and heart disease, present a well-written manuscript evaluating the use of the Cardiac Depression Scale in outpatients with heart disease. Study of this sample represents the key incremental advance of this manuscript. Conclusions could benefit from greater emphasis on this rather than over-extension to statements of sensitivity, specificity, and reliability for which this study was not designed to address.

Major Compulsory Revisions:

1) As noted in the discussion, one of the limitations of the paper is the comparison to other depression scales rather than to diagnosis based on structured interview. Supplemental Table 3 might suggest the CDS over-diagnoses depression as less than ½ the sample was identified as non-depressed. This lends some question regarding the specificity of the test, or at least the selected threshold, and should be discussed.

2) Conclusion, final sentence, please reframe given the limitations of the study. Given the lack of an interview to confirm diagnosis, it does not seem prudent to comment on the sensitivity or specificity of the scale. It would seem the unique contribution of this study relates more to the application of this scale to a slightly different population with heart disease than other studies.

Minor Essential Revisions:

1) Background, paragraph 1, please rephrase the “as a consequence” following reference [18] as it implies that this has been established to mediate the relationship between depression and cardiovascular events.

2) Methods, Measures, Depression. Please add clause to end of sentence stating “The CDS has fewer items that refer to somatic symptoms of depression” to indicate what scales the CDS is being compared to. It may be worth also specifying that this is relatively fewer given the large number of total items on the CDS relative to other scales. Please also specify the cut-off for mild/moderate depression on the CDS.

3) Results, last paragraph, please rephrase the statement regarding the “CDS being more sensitive to detecting severely depressed participants” as it implies we know whether these participants are truly severely depressed. This higher percentage could reflect more false positives.
4) Discussion, paragraph 5, last sentence. The proportion identified has more to do with the cutoff’s employed than the scale of the items. A higher CDS cutoff for severe would certainly result in fewer cases identified as severe depression. Consider deleting or at least rephrasing this sentence.

5) Discussion, paragraph 6. Wise, Harris, and Carter found 38% of their sample as mild, moderately, or severely depressed. The current analysis finds 52.6%. Please reframe the results to the context of the literature. This paragraph could perhaps be integrated with paragraph 4 which provides a potential explanation for the high mean CDS scores.

6) Table 1, please list actual p-values. It is not clear what testing was done for “medical history” and would probably be most appropriate to contrast groups on each individual component of the medical history.

7) Table 2 will require some copy-editing (e.g. i instead of I, im instead of I’m). The authors may want to comment on the assignment of items 11 and 14, which appear to load with anhedonia.

8) It seems unusual that the correlation between the CDS and the BDI-2 is approximates the correlation between the CDS and the STAI. How well is it targeting the construct of depression? What was the correlation between BDI-2 and STAI? This warrants some discussion.

Discretionary Revisions:
1) Methods, Participants and procedure. Were there any differences noted between those who declined participation and those who agreed to participate in the study.

2) The discussion section seems to devote a lot of space to reiterating the results. It might be helpful to devote more space to placing in the context of the existing literature, particularly given the emphasis in the background of this paper focusing on those who “are medically stable and had settled into their community surroundings.”

3) Table 3. Please clarify statistical reporting for group differences.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests.